

Executive Registry

82-0584/3

15 April 1982

MEMORANDUM FOR: Deputy Director of Central Intelligence
Deputy Director, Defense Intelligence Agency

SUBJECT: SAFE Audit Report

1. At the Steering Committee meeting on 8 April, following the presentation of the results of the audit of the SAFE project, objections regarding the audit findings were voiced. We were directed to resolve any outstanding issues and report back to the Committee.

2. We find the number of issues of significance remarkably small, considering the harsh criticism leveled by the audit report at those who have been responsible for the management of the SAFE project. Setting aside questions of technical inaccuracy which do not have an impact on the conclusions and which stem from the sharply limited time available to the audit team, the following points have been put forward by the Consolidated SAFE Project Office (CSPO) team as issues deserving the attention of DIA and CIA management:

a. On the subject of requirements, the report seems to contradict itself (a point admitted by the audit team). CSPO points to extensive negotiation with customer organizations on requirements and their priorities, and asserts that contact between contractor and users has been encouraged. All agree that uncontrolled communications between [] and end users could lead to chaotic direction to the contractor. CSPO concurs that the communication of the requirements to the contractor has not been effective.

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b. The task given to the developers of SAFE was to provide an integrated environment to the end user. It is not obvious to CSPO personnel that modification of existing software packages will provide the requested integration with less risk, and they question whether the resulting system will in fact be more extensible, reliable, and economical than the system they were developing. They agree that the integration they sought is pushing the present state-of-the-art and does not provide for incremental deliveries modified by feedback from user experience.

DIA review completed

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c. According to CSPO, the funding authorities recognized that SAFE was to be a system developed from state-of-the-art hardware and software and that a significant portion of the funding was for software development. They question whether the best approach is to start over with existing software packages. They recognize that the current development path is high risk and would likely result in a development that would not implement the present set of requirements. Many believe the existing design could be completed with a corresponding reduction of high risk areas.

d. They find the report unclear on the subject of commonality. They believe care must be exercised when selecting changes so as to maintain consistency with the directives of Congress, and fear that "parallel development" of C and D SAFE will tend to minimize commonality. They are unclear about what the "common backbone" is to be.

e. CSPO notes that SAFE's DBMS requirements represent a unique combination of complex search, indexing, retrieval and performance needs. When surveyed, all extant DBMS' were found to be significantly short of SAFE's needs. Therefore, developing a DBMS (or, more properly, an Information Storage and Retrieval System) was not an unreasonable approach. CSPO understands that the proposed approach - integration of existing capabilities in the marketplace - may not achieve the present set of requirements but that there is significantly less risk of failure to provide useful and significant capabilities to intelligence analysts.

f. CSPO does not find persuasive evidence that [redacted] equipment will not provide an adequate environment for SAFE's functional and performance needs. They expect [redacted] to provide equipment with greater capacity over the life of SAFE, providing enhanced capability to meet system needs. They recognize, however, that this creates a significant dependency on future announcements, with attendant risk. STAT

g. CSPO rejects the charge that they became a competing design organization. They intentionally avoided giving technical direction to TRW. Their primary interaction [redacted] has been in validating the design as one which can support SAFE requirements. STAT

h. CSPO does not find in the report a logical progression of reasoning which leads from the findings to the recommendations. The findings, in tone if not in words, recommend termination. CSPO would like to see an elaboration of the risk reduction philosophy.

3. Discussion with members of CSPO reveals that although they felt impelled to put forward these concerns about the audit report, they remain totally committed to the development of SAFE. They are prepared to accept revised instructions, guidelines, and development strategies, and understand that other considerations may cause the managers of the two agencies to seek a lower risk path to the development of SAFE. It is particularly worth noting that [redacted] who articulated some of CSPO's concerns during the last meeting, is eager to remain with the project and to help develop SAFE along whichever development path management selects.

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4. The concerns expressed by the members of CSPO are legitimate and came as no surprise. Their commitment to the program is nothing but commendable, and their views on the prospects for the success of the development effort were well known. The fact remains, evidence of serious problems was sufficiently strong to lead to the serious step of program audit, and whatever flaws may be found in the report of a team which was given extremely short deadlines, their conclusions reinforce our conviction that some form of redirection is called for.

5. New project directors have been designated, both in TRW and in CSPO. The contractor has been apprised of the nature of our concerns, and he has been asked to explore with CSPO alternative development strategies. The specific recommendations of the audit team should be treated as inputs to the total process; the next step is to let the new managers develop some alternative courses of action, with cost and schedule estimates, for consideration by the two agencies. It is early to estimate how quickly these alternatives can be developed, but no time will be wasted. The three senior officers from CSPO will spend next week [redacted] beginning this process.

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6. On 13 April we met for the first time with our newly formed Technical Advisory Board, comprised of [redacted] NSA, [redacted] They received a general briefing on SAFE and its present troubles and expect to be reconvened when we have some alternative development strategies to discuss.

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[redacted]
HARRY E. FITZWATER
Deputy Director for Administration,
CIA

[redacted]
Vice Assistant Director for
Resources and Systems, DIA

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cc: Executive Director, CIA

Members, SAFE Steering Committee:

[redacted] Director, Intelligence Community Staff

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Leslie C. Dirks, Deputy Director for Science and Technology, CIA

[redacted] Vice Director for Foreign Intelligence, DIA

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R. E. Hineman, Associate Deputy Director for Intelligence, CIA

Executive Agency

82-0534/2

SSCI Questions on the SAFE Project

Harry E. Fitzwater
Deputy Director for Administration
7D 24 Hqs

DDA 82-0538/6

5454 12 March 1982

Director of Central
Intelligence
7D 5607 Hqs

DCI,

The attached contains questions raised by the SSCI following D/DIA's briefing on the DIA FY'83 budget. The answers were prepared by DIA with assistance from the SAFE Project Office. This may help you with your discussion with STAP on Monday, 15 March.

15/ Harry
Harry

Att

cc: DDCI
ExDir

DDA:HEFitzwater:kmg (12 Mar 82)
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Question III (2): (U) The DDCI recently acknowledged that Project SAFE is in considerable technical difficulty and his prognosis is not good that CIA and DIA will receive the system originally envisioned.

SAFE has been of considerable interest to this Committee since FY 1978 when the joint CIA-DIA development effort was authorized. The Committee has authorized the full SAFE budget request on the basis that joint system development was cost effective and represented the best approach to satisfy the ADP needs of both agency's analytical elements.

(a) (U) In terms of the hardware and software required to implement the system design, what major difficulties are being faced? What are the IMPACTS in terms of schedule and cost? Relative to original cost estimates, what is the expected size of the cost overrun to IOC and FOC?

Answer:

(U) Initially, the system design was planned around an advanced software technology that was at the edge of "state-of-the-art". This design approach proved infeasible to implement and after about 9 months research, redesign was required using the traditional transaction processing software as a base. STAT

(U) Currently the project is proceeding around a detailed system design for Block 1 (CIA Block) and an overall top level design for the entire project. The major hardware and software difficulties being faced are categorized as follows:

- Integration of SAFE user language into the software design.
- Inadequate integration of failure and error recovery procedures.
- More hardware may be needed to meet performance requirements under user loading at FOC.

(U) These technical issues have been identified and design alternatives are being evaluated by the government and the contractor.

(U) The impacts of these technical issues on the project cost and schedule are being addressed by a technical audit of the project currently underway within the government. As a minimum the schedule delay for Block 1 is estimated by the contractor to be 10 months. This estimate and an estimate of the cost impact will be finalized after the results of the audit. Tentatively, it is estimated that the

project costs through Block 4 development will increase in the range of 30 to 60 percent over the original estimates part of which are cost for Data Base conversion not adequately covered in the original estimate. The FY83 budget includes \$10 million of the total increase. One of the tasks of the audit group is to assess the estimated cost of the system in relation to the original estimates. These estimates will be provided as soon as they are available.

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(b) (U) Identify the cause of major schedule and cost deviations in terms of technical and managerial deficiencies on the part of the prime contractor.

Answer:

(U) The causes of major schedule and cost deviations in terms of technical and managerial deficiencies on the part of the prime contractor are interrelated, but are generally presented as follows:

-- From a technical viewpoint, the complexity of the integration of both agencies' requirements and the system design was underestimated by the contractor and the government. Technically the system design was very complex for a very large system. As the contractor's understanding of the details and intricacies of the requirements increased and design was expanded, the costs and schedules became more realistic. Over the last few months, the major technical and remaining design issues have been identified. Our audit should reveal whether and how quickly these issues can be resolved.

-- From a managerial viewpoint, the contractor has been deficient in a number of areas in managing the project. For example, a firm project plan was late in being developed, a detailed PERT plan for Block 1 was late in being completed, and key technical personnel were replaced on the project over the past several months. All of the deficiencies have contributed to the project delays and caused cost increases.

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(c) (U) For each major deviation identified above, describe what action was taken by the Joint Project Office to place development of SAFE back on schedule.

Answer:

(U) Actions have been taken by the CSPO to remedy the problems and place the project on schedule.

(U) In the technical arena:

-- Increased DIA/CIA analyst contact with the contractor through workshops to further define requirements and reduce system design complexities.

-- Conducted In-Progress Reviews and Design Reviews in Communications subsystem, System level design and Block 1 overall design to assess the status of project design and, to the maximum extent possible, resolve technical issues.

-- As a result of the system Preliminary Design Review (PDR) held in March 1981, the Government and the Contractor agreed to develop the system in blocks in order to reduce complexity and divide the system development into more manageable pieces.

-- Worked with the contractor to develop a phased implementation plan for incremental deliveries of Block 1 capabilities as a testbed system.

-- Provided specific written guidance to the contractor management structure regarding technical problems and potential solutions resulting from Block 1 PDR in Nov 81 - Jan 82.

(U) From a managerial viewpoint, the CSPO and the Government took actions in the following areas:

-- Directed the contractor to employ a detailed project plan supported by

an automated PERT scheduling tool for planning and controlling work schedules and software development.

-- Placed an on-site management representative in July 1981 to provide day-to-day feedback on the project. STAT

-- Drastically reduced the award fee to "marginal" levels with accompanying guidance to the contractor to focus management attention on areas of technical and managerial concern to the Government.

-- Directed specific written critique of project problems to management to ensure high level management attention. STAT

-- Scheduled visits by high level government executive managers from both agencies to review the status of the project and to keep government pressure on the contractor to overcome difficulties in the project development.

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(d) (U) What action has the DCI undertaken to obtain an independent assessment of the problem SAFE faces? What were these results?

Answer:

(U) During the period of November 1981 to February 1982 senior officials of the DIA, the IC Staff, and the CIA, to include members of the CIA Scientific and Technical Advisory Panel personally reviewed the status of the SAFE Project on-site [] and the CSPO [] Based on the findings of these officials, a Technical Audit of the SAFE Project was initiated. The results will be available for review in mid-April 1982.

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(e) (U) When will the government know what system the prime contractor will deliver to DIA and CIA at IOC?

Answer:

(U) At this time there has been no change in government guidance to the contractor and the entire system from Block 1 through Block 4 as detailed in baseline system functional specifications is required and planned for delivery. Any preliminary delivery before Block 1 would be used for testing and evaluation purposes only.

(U) As a result of the audit to be completed by 1 April and subsequent determinations of the technical feasibility and potential cost overruns, system requirements and delivery schedules may require revisions in the project. It is expected that these changes, if required, will be determined in the next two to three months.

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(g) (U) What penalties or obligations does the government assume, would it decide to terminate the SAFE contract in 1982?

Answer:

(U) The major loss assumed by the Government is the cost of substantial delay of a vitally needed system by the intelligence analysts of both Agencies. Contractually, termination costs of the current contract are \$4.2 million (maximum exposure).

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(h) (U) When will the government and the Congress become aware of the strategy needed to get SAFE back on cost and schedule?

Answer:

(U) The SAFE Project Plan, in conjunction with the primary technical review, provides the steps to be followed for the project. The CSPO is evaluating that plan but has authorized work to proceed for major portions of the development where technical issues are resolved. The government is expected to review its position with respect to the project as soon as the audit team completes its effort in April. Any changes in strategy for the project will be determined shortly thereafter and a report on the project will be provided to the committee.

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(i) (U) The SAFE management plan specifies that a Steering Committee, consisting of senior community officials, will periodically review project progress, and provide managerial direction as required. When did the SAFE Project Office inform the Steering Committee of the risks associated with SAFE? What action was taken? STAT

Answer:

(U) The SAFE Steering Committee has been briefed quarterly on the Project Status since the Consolidated Project Office was formed (January 1978). The latest full Steering Committee meeting was held in December 1981, at which time the current problems of cost and schedule were fully addressed. A subsequent meeting has been scheduled for 12 March 1982 to brief the technical status, project progress, and related problems as a result of the Block 1 Preliminary Design Review. In addition, a Steering Committee meeting will be scheduled to review the results of the audit.

(U) As a result of the December 1981 Steering Committee meeting, several members visited the facility to personally review project status. Several members of the committee also met with senior management to review the status of the project and advise the contractor of government concerns with the project status. STAT
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(k) (U) How has the separation between the SAFE Project Office in Washington and the [] development facility [] contributed to the management and technical problems faced?

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Answer:

(U) The separation of the [] project from the government's project office has contributed to the management problems by inhibiting an immediate communication on problems. This has been partially offset by a [] staff located in the CSPO office spaces and one government man located at []. Monthly management meetings and many regular topical/issue meetings, while costly and involving considerable TDY, are used extensively to maintain positive communications.

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(1) (U) What is the likely impact on DIA if continued reliance of DIAOLS is necessary? What happens when the DIA analyst work force begins moving into the new DIA building during 1983?

Answer:

(U) Assuming continued reliance on DIAOLS is required beyond the original projected complete phaseout in 1987, the analyst will have to continue to suffer with an increasingly outmoded and saturated system. It is likely that, if substantial delays are required beyond 1987 to phaseout DIAOLS, intelligence analysis and production will be degraded.

(U) It is likely that all or part of the DIAOLS systems will be moved to the new DIA building to support analysts that will begin occupying that facility in 1984. It may prove feasible to begin installing SAFE in the new facility once Block 1 capabilities are available and can be interfaced with DIAOLS to also provide support to DIA analysts. SAFE could then continue to be expanded with capabilities through Block 4 added to replace DIAOLS.

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(m) (U) Given the likelihood of reduced initial operating capabilities and an extended period to achieve FOC, what revisions should be made to the FY 1983 budget request for SAFE? When will they be made known?

Answer:

(U) None, specifically for FY 1983.

(U) The budget request for FY 1983 specifically was made in light of the most recent estimate of project cost and is matched to the project needs. It represents an increase of \$10 million above previously planned FY 1983 levels. Total project costs will be reevaluated in April 1982 when the technical audit findings are available. Outyear projections will be revised at that time.